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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/441,003 | 11/16/1999 | JOHN ABEDOR | 112008-0027C | 3749 |

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| EXAMINER |
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NGUYEN, JOHN QUOC

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| ART UNIT | PAPER NUMBER |
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3654

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/441,003

Applicant(s)

ABEDOR ET AL.

Examiner

John Q. Nguyen

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*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***Period for Reply****A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 June 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4-27 and 32-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,4-27 and 32-42 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) The proposed drawing correction filed on 6/25/03 is: a) approved b) disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.

- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____ .
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 29. 6) Other: _____

Applicant's election with traverse of Group I, claims 1, 2, 4-27, and 32-41, in Paper No. 17 has been acknowledged.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "mechanical device" (claim 1).

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 7, 8, 12, 14, 15, 17, 20, 25, 42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Said subject matter is "said Kalman filter including a mathematical model".

Claims 1, 2, 4-27, and 32-42 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following appear to lack sufficient antecedent basis (in the claim):

For clarity and definiteness, it appears that —the tape—should be inserted after "engaging" (claim 17, line 4), that "with the tape" (claim 17, line 5) should be deleted.

In claim 1, it is not clear what is the relationship between the tape leaving, the angular position, and the mechanical device?

In claim 12, where is the movement of the tape which is measured by the third transducer? And what is the third angular position a measurement of?

In claim 9, it is not clear how the initial estimate is obtained?

In claim 20, it is not clear how the amount of tape is calculated from just 2 variables.

In all claims, it is not clear how the radius is calculated/estimated from just three angular position measurements, one measurement for each of three variables, since each angular position measurement is equivalent to an instantaneous snapshot of the reel or mechanical device. Say the three measurements are 32 deg., 58 deg., and 5 deg., what is the amount of tape? In claim 42, it is not clear how the amount of tape is calculated with just one position of the reel.

All claims should be revised carefully to correct all other deficiencies similar to the ones noted above.

Claims 1, 2, 4-27, and 32-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Hermanns et al (US 4964582) and Macchia (US 4399953).

The admitted prior art discussed on pages 2-3 of the specification discloses substantially all the claimed features including a tape system having a supply reel, a take-up reel, a capstan, tension arms, a servo system. It is also stated that "the tape pack radius is calculated from measurements of the angular positions of the reels and the capstan." and that filters have also been used. It is deemed inherent that tension arm measurements ("fourth angular positions") are included in the calculation of the

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amount of tape on the reel since this is old and well known in the art. Kalman filters for minimizing errors in predictive computations are old and well known as discussed by Macchia. Hermanns et al. discloses a system utilizing Kalman filters for application to winding apparatus (note column 4, lines 17-27, column 6, lines 17-20, column 7, lines 1-68, column 10, lines 41-63). In view of the prior art as a whole, it would have been obvious to a person having ordinary skill in the art to provide the admitted prior art apparatus with Kalman filters to minimize errors in the way that Kalman filters are known for. The minimum and maximum values and the three-sigma intervals are old and well known in the field of data and statistical analysis so that unreasonable data does not contaminate and reduce the accuracy of the analysis and official notice is taken of such. The step-by-step process of collecting data points, such as when to update the data and the time interval in between, etc, would have been within the level of one of ordinary skill in the art and would have been determined through routine engineering experimentation and optimization.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over known prior art . As noted above, the minimum and maximum values and the three-sigma intervals are old and well known in the field of data and statistical analysis so that unreasonable data does not contaminate and reduce the accuracy of the analysis and official notice is taken of such. The application of such principles to estimating a length of tape would have been obvious to a person having ordinary skill in the art.

Applicant's arguments filed 6/25/03 have been fully considered but they are not persuasive.

As noted above, since each angular position measurement is equivalent to an instantaneous snapshot of the reel or mechanical device, it is not clear how the radius is calculated. This is analogous to taking a picture of the tape, the picture showing a particular instantaneous position of each reel (the side flanges, for instance) or mechanical device; it is not clear how the radius of tape on the reel(s) can be calculated.

Applicant refers to the "Theory" on pages 6-11 of the specification. But the subject matter as claimed at least in the independent claims are different than what's discussed in the theory. For instance, it is stated (page 6) that "...the case when position measurements are made at regular short intervals..."; this is not recited in any of the independent claims. Applicant's arguments are therefore moot.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "specialized mathematical models") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Lines 17-27 (column 4) and 17-21 (column 6) of Hermanns et al and lines 40-44 of column 5 of Macchia teaches/suggest the use of a Kalman filter as claimed;

therefore, the combination set forth is deemed obvious as noted in the rejection above. Furthermore, the admitted prior art already uses filters and both Hermanns et al and Macchia suggests the use of Kalman filters, therefore making the combination obvious to one of ordinary skill in the art. Furthermore, the information listed on the IDS of 6/25/03, reinforce the examiner's position that Kalman filters for minimizing errors in predictive computations are old and well known. Kalman filters are applicable to anything that can be expressed as a number; therefore, it would be impossible to list all instances in which Kalman filters can be applied.

Kalman filter is a mathematical tool, just like addition, division, subtraction, integration, Fourier transforms, etc. It is deemed that one of ordinary skill in the art understand and knows how to apply the mathematical tools to each new application. Only one who is unskilled would look at specific applications, such as Macchia or Hermanns' applications, and try to use the exact same variables and equations developed for those specific applications for application to a totally different application. The presumption is that the worker in the art is **skilled in the art**, not unskilled. In response to applicant's argument that the use the exact same variables and equations developed for Macchia and Hermanns does not result in the claimed invention, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Regarding the comments on claim 34, it is noted that applicant does not deny that the examiner's assertion that the minimum and maximum values and the three-sigma intervals are old and well known in the field of data and statistical analysis, but only stated that they "have not been used in conjunction with a measured radius of a tape on a reel". Again, statistical analysis is a mathematical tool, just like addition, division, subtraction, integration, Fourier transforms, etc. It is deemed that one of ordinary skill in the art understand and knows how to apply the mathematical tools to each new application. Only one who is unskilled would look at specific applications, such as Macchia or Hermanns' applications, and try to use the exact same variables and equations developed for those specific applications for application to a totally different application. The presumption is that the worker in the art is **skilled in the art**, not unskilled.

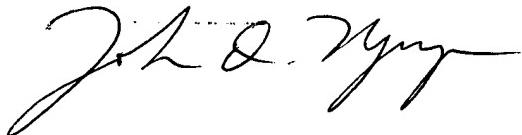
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Q. Nguyen whose telephone number is (703) 308-2689. The examiner can normally be reached on Monday-Friday from 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katherine Matecki, can be reached on (703) 308-2688. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 (before Final) and (703) 872-9327 (after Final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177.



John Q. Nguyen
Primary Examiner
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